

CLAIMS

What is claimed is:

1. A method of controlling tracking in a disc drive using a tracking actuator, a feed motor, and an objective lens comprising:
monitoring whether the tracking actuator deviates from a dynamic range based on a signal controlling the feed motor when tracking is performed; and
returning the objective lens connected to the tracking actuator to a neutral point in response to determining that the tracking actuator deviates from the dynamic range.
2. The method of claim 1, wherein the returning of the objective lens is performed by turning off a tracking servo of the disc drive.
3. The method of claim 1, wherein the monitoring comprises comparing the signal controlling the feed motor with a predetermined reference value.
4. The method of claim 3, wherein the monitoring further comprises monitoring whether the signal controlling the feed motor is greater than the predetermined reference value for a predetermined time, when the signal controlling the feed motor is greater than the predetermined reference value.
5. The method of claim 4, wherein the predetermined reference value is set based on the dynamic range and a movable range of the tracking actuator.
6. The method of claim 4, wherein the predetermined reference value is set at a value approaching a limit of the dynamic range of the tracking actuator.
7. The method of claim 3, wherein the predetermined reference value is set based on the dynamic range and a movable range of the tracking actuator.
8. The method of claim 3, wherein the predetermined reference value is set at a value approaching a limit of the dynamic range of the tracking actuator.

9. A tracking control apparatus for a disc drive having a tracking actuator, an objective lens connected to the tracking actuator, and a feed motor, the tracking control apparatus comprising:

an optical pickup outputting a radio frequency signal from a signal picked up from a disc loaded in the disc drive when the disc drive is driven;

a radio frequency amplifier outputting a tracking error signal detected from the radio frequency signal;

a servo control unit outputting a control signal for driving the tracking actuator and the feed motor based on the tracking error signal output from the radio frequency amplifier; and

a control unit monitoring the control signal for driving the feed motor output from the servo control unit, and, in response to determining that the tracking actuator deviates from a dynamic range, controlling the servo control unit to return the objective lens connected to the tracking actuator to a reference position.

10. The tracking control apparatus of claim 9, wherein the control unit controls the servo control unit to turn a tracking servo off to return the objective lens to the reference position, preventing damage to the tracking actuator and the objective lens when an overcurrent flows through tracking coils due to the tracking actuator deviating from the dynamic range.

11. The tracking control apparatus of claim 9, wherein the control unit compares the control signal for driving the feed motor with a predetermined reference value to determine whether the tracking actuator deviates from the dynamic range.

12. The tracking control apparatus of claim 11, wherein the predetermined reference value is set based on the dynamic range and the movable range of the tracking actuator.

13. The tracking control apparatus of claim 9, wherein the control unit compares the control signal for driving the feed motor with a predetermined reference value, and, when the control signal is greater than the predetermined reference value for a predetermined time, determines that the tracking actuator deviates from the dynamic range.

14. The tracking control apparatus of claim 13, wherein the predetermined reference value is set based on the dynamic range and the movable range of the tracking actuator.

15. The tracking control apparatus of claim 13, wherein the predetermined reference value is set at a value approaching a limit of the dynamic range of the tracking actuator.

16. A tracking control apparatus for a disc drive having a tracking actuator, an objective lens connected to the tracking actuator, and a feed motor, the tracking control apparatus comprising:

a servo control unit receiving a tracking error signal based upon a signal from a disc in the disc drive and outputting a control signal for driving the tracking actuator and the feed motor; and

a control unit monitoring the control signal for driving the feed motor and controlling the servo control unit to return the tracking actuator to a reference position when the controller determines that the tracking actuator deviates from a dynamic range.

17. The tracking control apparatus of claim 16, wherein the disc is a compact disc (CD) or a digital versatile disc (DVD).

18. The tracking control apparatus of claim 16, further comprising a tracking actuator driver that drives the tracking actuator using the control signal output from the servo control unit to move the objective lens in a tracking or radial direction of the disc.

19. The tracking control apparatus of claim 18, further comprising an equalizer receiving the control signal output from the servo control unit and outputting a low frequency band signal, the low frequency band signal representing an amount of deviation of the objective lens from a neutral point within the dynamic range.

20. The tracking control apparatus of claim 19, further comprising a feed motor driver driving the feed motor to move the tracking actuator using the low frequency band signal output from the equalizer, a moving distance of the feed motor being a distance the tracking actuator is moved to return the objective lens to the neutral point.